

REMARKS

Claims 1 through 21 remain in this application. Claims 1, 10 and 19 are hereby amended.

Summary of Final Office Action mailed Sep. 12, 2006

Claims 1-7, 9-15 and 17-20 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 6,035,124 (issued Mar. 7, 2000) to Ng, [hereinafter “Ng”]. See USPTO Final Office Action, page 5 (mailed Sep. 12, 2007) [hereinafter “Final OA”].

Claims 8, 16 and 21 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ng in view of U.S. Patent No. 5,465,374 (issued Nov. 7, 1995) to Dinkjian, et al., [hereinafter “Dinkjian”]. See USPTO Final OA, page 11.

Regarding the 35 U.S.C. § 102(b) rejections

Regarding the Ng patent, Ng is directed toward a system for “global value numbering” which was described in Applicant’s background of the invention as being insufficient to handle the complexity associated with a superword register which contains a set of components. Therefore Ng on its face does not appear to describe or suggest any type of redundancy checking for superword registers or multiple components contained in a superword register, that may be employed for example in single instruction multiple data (SIMD) processing.

With respect to Applicant’s Claim 1, Ng does not disclose *inter alia* “retrieving an operation value number from a first hash table based on the first hash value wherein said operation value number corresponds to components contained by superword register.” Furthermore with respect to Claim 1, Ng does not disclose “generating a result value number based on previous value number and the operation value number wherein said result value number is a combination of operation value numbers.”

For example, the USPTO has cited portions of the reference (Ng, col. 8, lines 27-28) stating that “[i]f the value numbers are not equal, then a new value number is formed and assigned if not already assigned.” See Final OA, page 6. However Ng defines a “value number” as “a symbolic execution of a basic block of code, in which all variables entering that basic block of code (straight line code) are given distinct symbolic values or value numbers.” See Ng, col. 5, lines 37-41.

Therefore an “operation value number [which] corresponds to components contained by a superword register” and “a result value number [that] is a combination of operation value numbers,” both in accordance with claim 1, are patentably distinguishable from the “value numbers” described by Ng.

The USPTO further cited Ng, col. 10, line 26 which states that “redundancy may be determined by a lookup each time any code is moved” as allegedly anticipating “searching a second hash table using the result value number” in accordance with claim 1. See Final OA, page 6. However, the redundancy determination of Ng is accomplished using “ Φ -functions” which are defined as “a pseudo-assignment resulting from a translation to Static Assignment (SSA) form.” See Ng, col. 5, line 66 – col. 6, line 1; col. 10, lines 25 – 60. In contrast, claim 1 requires “using the result value number” to perform the search which is not described by Ng.

Claim 1 is therefore patentably distinguishable from Ng and Applicant respectfully requests reconsideration and withdrawal of the 35 U.S.C. § 102(b) rejection of Claim 1.

Claim 10 has been alleged together with claim 1 to be anticipated under the same cited portions of Ng. See Final OA, pages 5, 6. Therefore in light of the discussion of Ng above and with respect to Claim 10, Ng does not disclose “retrieves an operation value number from a first hash table based on the first hash value wherein said operation value number corresponds to

components contained by superword register. Further, *Ng* does not disclose “generates a result number based on previous value number and the operation value number wherein said result value number is a combination of operation value numbers.” Therefore Claim 10 is also patentably distinguishable from *Ng*. Applicants respectfully request reconsideration and withdrawal of the 35 U.S.C. § 102(b) rejection of Claim 10.

Claims 2 through 5, and Claims 7-9 which add additional novel and non-obvious features over the *Ng* reference are at least patentable for the reasons provided above for Claim 1 as Claims 2 through 5, and Claims 7 through 9 depend from and include all limitations of independent Claim 1 as amended. Therefore Applicant’s respectfully request reconsideration and withdrawal of the 35 U.S.C. § 102(b) rejections of Claims 2 through 5, and Claims 7 through 9.

With respect to claims 6 and 15, claim 6 and claim 15 provide the features of “when the first hash value is not within the first hash table, assigning (assigns) the first hash value a multiple component hash value.” *Ng* does not disclose “multiple component hash values.” The USPTO again cited to *Ng*, col. 8, lines 27-28 which states that “[i]f the value numbers are not equal, then a new value number is formed and assigned if not already assigned.” See Final OA, page 8. However, Applicants respectfully submit that simply assigning a value number where one has not been assigned is not “assigning ... a multiple component hash value.” *Ng* does not describe a “multiple component hash value.”

Therefore, claim 6 and claim 15 are patentably distinct from the *Ng* reference. Reconsideration and withdrawal of the 35 U.S.C. § 102(b) rejection of claims 6 and 15 is respectfully requested.

Claims 11 through 14 and 16 through 19 are dependent claims that depend from and include all limitations of independent claim 10 as amended. Therefore, Claims 11 through 14 and 16 through 18 are at least patentable for the reasons provided above with respect to Claim 10. Reconsideration and withdrawal of the 35 U.S.C. § 102(b) rejection of Claims 11 through 14 and 16 through 18 as respectfully requested.

Regarding Claim 19, Ng does not disclose “generating a result value number based on the previous value number and the operation value number wherein said result value number is a combination of operation value numbers.” Therefore, Claim 19 is likewise patentably distinct from the Ng reference. Reconsideration and withdrawal of the 35 U.S.C. § 102(b) rejection of Claim 19 is respectfully requested.

Claim 20 provides the feature of “when the first hash value is not within the first hash table assigning the first hash value a multiple component hash value.” As discussed above with respect to claim 6 and claim 15, the Ng reference does not disclose a multiple component hash value. Claim 20 is therefore patentably distinct from the Ng patent. Reconsideration and withdrawal of the 35 U.S.C. § 102(b) rejection of Claim 20 is respectfully requested.

Regarding the 35 U.S.C. § 103(a) rejections of claims 8, 16 and 21

Regarding the 35 U.S.C. § 103(a) rejections, Claim 8 is a dependent claim that depends from and includes all limitations of independent Claim 1 as amended. In addition, Claim 8 provides the feature of “if the write masked value is false setting the result value number equal to the operation value number and if the write masked value is true setting the result value number equal to the previous value number.” Claim 16 is a dependent claim that depends from and includes all limitations of independent Claim 10 as amended and provides the features of “when the at least one processor generates the result of value number, the at least one processor further

in response to the executable and for each component in a right mask: sets the result value number equal to the operation value number if the right mask value is false; and sets the result value number equal to the previous value number if the right mask value is true.” Claim 21 is a dependent claim that depends from and includes all limitations of independent Claim 19 as amended and provides the features of “generating the result value number includes for each component in the right mask if the right mask value is false setting the result value number equal to the operation value number and if the right mask value is true, setting the result value number equal to the previous value number.”

The USPTO admits that *Ng* does not explicitly disclose the use of a write mask and Applicants agree. See Final OA, page 11. The USPTO therefore cited *Dinkjian*, col. 4, lines 14-15 which states that “the write mask is used in the MOVE instruction to write the data string into a new memory location.” Applicant respectfully submits that using a write mask to write a data string into a new memory location is not “setting the result value number equal to the operation value number (if the write masked value is false) and if the write masked value is true setting the result value number equal to the previous value number.” *Dinkjian* does not disclose an operation value number or a previous value number. *Dinkjian* is directed to a data string processing arrangement for reducing memory storage requirements by allowing data strings to be stored without requiring the data strings to start or end on a memory word boundary. See Dinkjian, col. 2, lines 17-25.

Therefore, neither *Ng* nor *Dinkjian* whether alone or in combination describe or suggest the features of claims 8, 16 or 21. Therefore a *prima facie* case of obviousness under 35 U.S.C. § 103(a) has not been established under the *Ng* and *Dinkjian* references whether taken alone or in

combination. Reconsideration and withdrawal of the 35 U.S.C. § 103(a) rejection of claim 8, 16 and 21 is respectfully requested.

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CONCLUSION

No amendment made was related to the statutory requirements of patentability unless expressly stated herein. Also, no amendment made was for the purpose of narrowing the scope of any claim, unless Applicant(s) has/have argued herein that such amendment was made to distinguish over a particular reference or combination of references.

The Commissioner is hereby authorized to deduct any additional fees arising as a result of this response, including any fees for Extensions of Time, or any other communication from or to credit any overpayments to Deposit Account No. 22-0259.

It is submitted that the claims clearly define the invention, are supported by the specification and drawings, and are in a condition for allowance. Applicant respectfully requests that a timely Notice of Allowance be issued in this case. Should the Examiner have any questions or concerns that may expedite prosecution of the present application, the Examiner is encouraged to telephone the undersigned.

Respectfully submitted,

Date: Feb. 12, 2008

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